

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-143 (Canceled)

144. (Currently Amended) A semiconductor structure comprising:

a monocrystalline silicon substrate;

an amorphous oxide material in contact with the monocrystalline substrate;

a monocrystalline perovskite oxide material selected from the group consisting of  
alkaline earth metal titanates, alkaline earth metal zirconates, alkaline earth metal hafnates,  
alkaline earth metal tantalates, alkaline earth metal ruthenates, alkaline earth metal niobates,  
alkaline earth metal vanadates, alkaline earth metal tin based perovskites, lanthanum  
aluminate, lanthanum scandium oxide and mixtures thereof contacting the amorphous oxide  
material;

~~an amorphous oxide material overlying the monocrystalline silicon substrate;~~

~~a monocrystalline perovskite oxide material overlying the amorphous oxide material;~~

and

a monocrystalline compound semiconductor material overlying the monocrystalline perovskite oxide material.

145. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline silicon substrate is orientated in the (100) direction.

146. (Previously Presented) The semiconductor structure of claim 144 further comprising a template layer formed between the monocrystalline perovskite oxide material and the monocrystalline compound semiconductor material.

147. (Previously Presented) The semiconductor structure of claim 144 further comprising a buffer material of monocrystalline semiconductor material formed between the monocrystalline perovskite oxide material and the monocrystalline compound semiconductor material.

148. (Previously Presented) The semiconductor structure of claim 147 further comprising a template layer formed between the monocrystalline perovskite oxide material and the buffer material.

149. (Previously Presented) The semiconductor structure of claim 147 wherein the buffer material is selected from the group consisting of: Germanium, a  $\text{GaAs}_x\text{P}_{1-x}$  superlattice where x ranges from 0 to 1, an  $\text{In}_y\text{Ga}_{1-y}\text{P}$  superlattice where y ranges from 0 to 1, and an InGaAs superlattice.

150. (Currently Amended) The semiconductor structure of claim 144 wherein the monocrystalline perovskite oxide material is selected from the group consisting of: ~~alkaline earth metal titanates, alkaline earth metal zirconates, alkaline earth metal hafnates, alkaline earth metal tantalates, alkaline earth metal ruthenates, alkaline earth metal niobates, alkaline earth metal vanadates,~~ alkaline earth metal tin based perovskites, ~~lanthanum aluminate, and lanthanum scandium oxide.~~

151. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline perovskite oxide material comprises  $\text{Sr}_2\text{Ba}_{1-z}\text{TiO}_3$  wherein z ranges from 0 to 1.

152. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline compound semiconductor material is selected from the group consisting of: III-V compounds, mixed III-V compounds, II-VI compounds, and mixed II-VI compounds.

153. (Previously Presented) The semiconductor structure of claim 144 wherein the monocrystalline compound semiconductor material is selected from the group consisting of: GaAs, AlGaAs, InP, InGaAs, InGaP, ZnSe, AlInAs, CdS, CdHgTe, and ZnSeS.

154 - 163 (Cancelled)